REMARKS

Applicants' undersigned attorney thanks the Examiner for the Examiner's comments. Applicants respectfully request reconsideration of this patent application, particularly in view of the following remarks. Currently, Claims 1-75 are pending.

Amendment to the Claims

Claims 1-75 have been examined with no claims being allowed. Claims 1 and 24 have been amended herein. More particularly, Applicants have amended Claim 1 to clarify that the cellulose fiber that has been treated with the intra-crystalline swelling agent has a curl value of at least 0.15. Applicants have amended Claim 24 to include the limitations of Claim 30. Thus, Applicants respectfully request cancellation of Claim 30. No new matter has been added by this Amendment.

No additional fee is due for this Amendment because the number of independent claims remains unchanged and the total number of claims has been reduced.

Claim Rejections - 35 USC §103

The rejection of Claims 1-75 under 35 USC §103(a) as being unpatentable over Herron et al. (U.S. Patent 5,137,537) is respectfully traversed.

Applicants' Claims 1, 24, and 47 require a cellulose fiber to be treated with an intra-crystalline swelling agent. As explained in Applicants' specification at page 9, lines 2-13, an intra-crystalline swelling agent applied to a cellulose fiber has an effect of chemically curling the fiber. Applicants' Claims 1, 24, and 47 further require that a polymeric reactive compound be applied to the treated cellulose fiber. As explained in Applicants' specification at page 12, lines 11-13, a polymeric reactive compound can be used as a cross-linking agent to set the curl.

Herron et al. disclose fibers that have been crosslinked with a C_2-C_9 polycarboxylic acid crosslinking agent reacted with the fibers to form intrafiber crosslink bonds. However, Herron et al. fail to disclose or suggest chemically treating cellulosic fibers with an intra-crystalline swelling agent to modify the super-molecular

structure of the fibers, thereby imparting curl to the fibers. Instead, the fibers in Herron et al. may be mechanically separated, or "fluffed," to impart an enhanced degree of curl prior to crosslinking (Col. 7, line 66 – Col. 8 line 17). Herron et al. fail to disclose or suggest cellulosic fibers treated with an intra-crystalline swelling agent to chemically curl the fibers.

Additionally, Herron et al. fail to disclose fibers treated with a polymeric reactive compound or any other polymeric agent. The C_2-C_9 polycarboxylic acids disclosed by Herron et al. are not polymers, but instead have just a few carboxylic acid groups (hence the term "poly"-carboxylic acid). C_2-C_9 is far too few carbons to be considered a polymeric agent of any kind. Thus, a person skilled in the art would not be motivated to use Applicants' polymeric reactive compound based on the teachings of Herron et al.

The Examiner draws attention to Applicants' example on page 20 of Applicants' specification, and further suggests that the example does not support Applicants' assertion that the intra-crystalline swelling agent in the present invention is applied to the fibers and is subsequently washed away from the fibers, thereby forming curly fibers; and after the intra-crystalline swelling agent has been washed away, the polymeric reactive compound is then applied to the fibers. To the contrary, the example on page 20 fully supports Applicants' assertion. More particularly, the "SMSM"-CR54 fibers in the example are fibers that have been treated with an intra-crystalline swelling agent, and the swelling agent has been washed away, as explained on page 8, line 19 – page 9, line 13, particularly at page 9, lines 2-4. The sodium hypophosphite in the example serves as a catalyst, which is one of the suggested catalysts suitable for use in Applicants' invention, as described on page 17, lines 6-12.

Applicants disclose sodium hydroxide as one example of an intra-crystalline swelling agent. Herron et al. disclose sodium hydroxide as a catalyst for the crosslinking agent. Although sodium hydroxide may be suitable for both of these applications, the manner in which sodium hydroxide is applied to fibers creates substantially different results. When sodium hydroxide is used as an intra-crystalline swelling agent, namely ***in the absence of a polymeric reactive compound***, as disclosed by Applicants, a curled morphology is created (page 9, lines 2-13). When

sodium hydroxide is used as a catalyst ***in combination with a crosslinking agent***, a faster crosslinking process is achieved. As explained above, Applicants' invention uses a polymeric reactive compound, which is a crosslinking agent, to set a curl in place. Thus, in Applicants' invention, the intra-crystalline swelling agent is used to curl the fiber. Only ***after*** the fiber has been curled can a crosslinking agent be used to prevent the curl from uncurling. Herron et al. use a non-polymeric crosslinking agent to maintain a curl, and Herron et al. also fail to disclose or suggest the use of an intra-crystalline swelling agent to achieve the curl in the first place.

The Examiner contends that merely reversing or changing the order of steps in a process does not impart patentability when no unexpected result is obtained. Using the same substance, e.g. sodium hydroxide, in different capacities does not equate to changing the order of steps, but instead amounts to completely ***different*** limitations. Herron et al. fail to disclose or suggest the use of sodium hydroxide or any other suitable substances as an intra-crystalline swelling agent, and ***instead*** disclose the use of sodium hydroxide as a catalyst in combination with a crosslinking agent. As explained in Applicants' specification (page 9, lines 2-24; and page 17, lines 6-7), intra-crystalline swelling agents and catalysts, although they may be of the same composition, perform entirely different functions. More particularly, an intra-crystalline swelling agent is used in the absence of a crosslinking agent, whereas a catalyst is used in the presence of a crosslinking agent. Herron et al. fail to disclose or suggest the use of sodium hydroxide, or any other suitable intra-crystalline swelling agents, applied to an uncrosslinked fiber in the absence of a crosslinking agent.

Because Herron et al. disclose sodium hydroxide as a catalyst, a person skilled in the art would not be motivated by the teachings of Herron et al. to apply sodium hydroxide, or any other intra-crystalline swelling agent, to a fiber to modify the super-molecular structure of the fiber to impart curl to the fiber ***prior*** to crosslinking the fiber.

Furthermore, Herron et al. disclose extremely small amounts of sodium hydroxide (such as 410 ml of 50% NaOH solution in 62,265 g of combined citric acid and H_2O in Example 1, Col. 23), whereas Applicants' Claims 7, 24, 58, and 59 recite

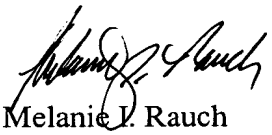
concentrations of greater than about 10%, or greater than about 15%, by weight metal oxide or other swelling agent. Thus, Herron et al. further fail to disclose or suggest the fibers and methods of Applicants' Claims 7, 24, 58, and 59.

For at least the reasons given above, Applicants respectfully submit that the disclosure of Herron et al. fails to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Applicants believe that this case is now in condition for allowance. If the Examiner feels that any issues remain, then Applicants' undersigned attorney would like to discuss the case with the Examiner. The undersigned can be reached at (847) 490-1400.

Respectfully submitted,



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